

Aerospace Grade Carbon Felt Preform, Phase I

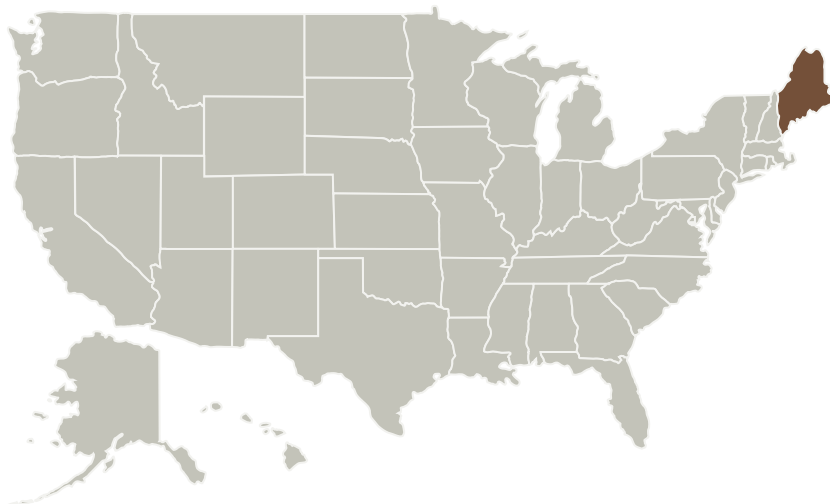
Completed Technology Project (2011 - 2012)



Project Introduction

Fiber Materials, Inc. (FMI) will develop an aerospace-grade carbon felt preform by employing application specific materials with effective processes and fabrication technologies. Innovative combinations of materials and processes will result in thermal protection system (TPS) preforms that will enable a range of end applications. Future mission flight environments and designs, such as those anticipated for Mars EDL missions, will require a variety of TPS options to accommodate entry system designs. The capability of the developed carbon felt preform solutions will address various vehicle shapes, integration methods and the ability to deploy a flexible TPS. Testing for mechanical and thermal robustness will be conducted in a two phase program approach. The Phase I program will assess materials, designs and processing options to be developed, and cost effective manufacturing and assembling methodologies. The material approaches, design options, fabrication/assembly methods, Phase II work plan, Phase II proposal and final report are delivered at the conclusion of the Phase I program. During the Phase II program, a mission-applicable preform utilizing the developed material system will be demonstrated. The proposed materials, designs and methods are currently TRL < 3. It is anticipated that TRL > 5 will be achieved at the conclusion of a successful Phase I and Phase II program.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

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Organizations Performing Work	Role	Type	Location
Fiber Materials, Inc.	Supporting Organization	Industry	Biddeford, Maine

Primary U.S. Work Locations

Maine

Project Management (cont.)

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX14 Thermal Management Systems
 - └ TX14.3 Thermal Protection Components and Systems
 - └ TX14.3.1 Thermal Protection Materials